

REMARKS

Claims 1-18 are pending in this application. Claims 1-11 have been amended. Claims 12-18 have been added.

Specification

The specification has been amended to correct minor typographical and grammatical errors.

Claims

Claims 1-11 have been amended to delete multiple dependencies and/or to place them in conformance with U. S. practice.

Drawings

Figs. 1-6 and 10 have been amended to correctly identify the photocoupler as reference numeral --113--and the photodiode as reference numeral --113a--, in conformance with the specification.


Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Daniel K. Dorsey (Reg. No. 32,520) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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Attachment(s): Abstract of the Disclosure

ABSTRACT OF THE DISCLOSURE

A switching power supply apparatus is provided that is not thermally destroyed even if the load remains short-circuited for a long time when the voltage of the commercially distributed alternating-current power supplied thereto is high. When the load connected between a positive and a negative output terminal is short-circuited, the short-circuited state is detected by an output voltage detection circuit, and a switching control circuit stops operating. At start-up, a current from a bridge rectifier circuit is fed, as a start-up current, through a constant current circuit to the switching control circuit. Thus, even when the voltage of the commercially distributed alternating-current power is high, a constant current flows through the switching control circuit. This permits the power consumed with the load short-circuited when the input voltage from the commercially distributed alternating-current power is high to be approximated to that consumed when the input voltage is low.

FIG. 1

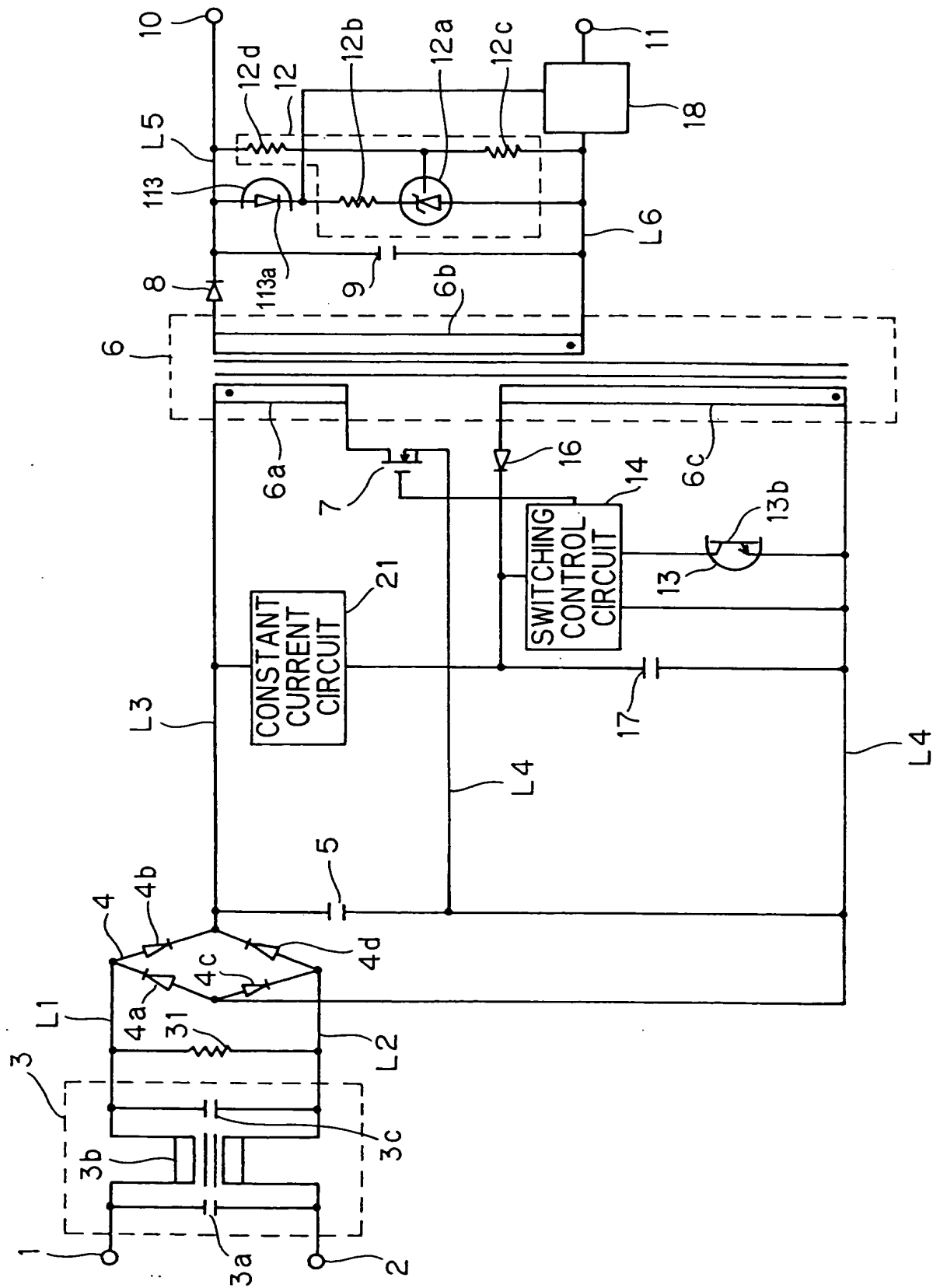


FIG. 2

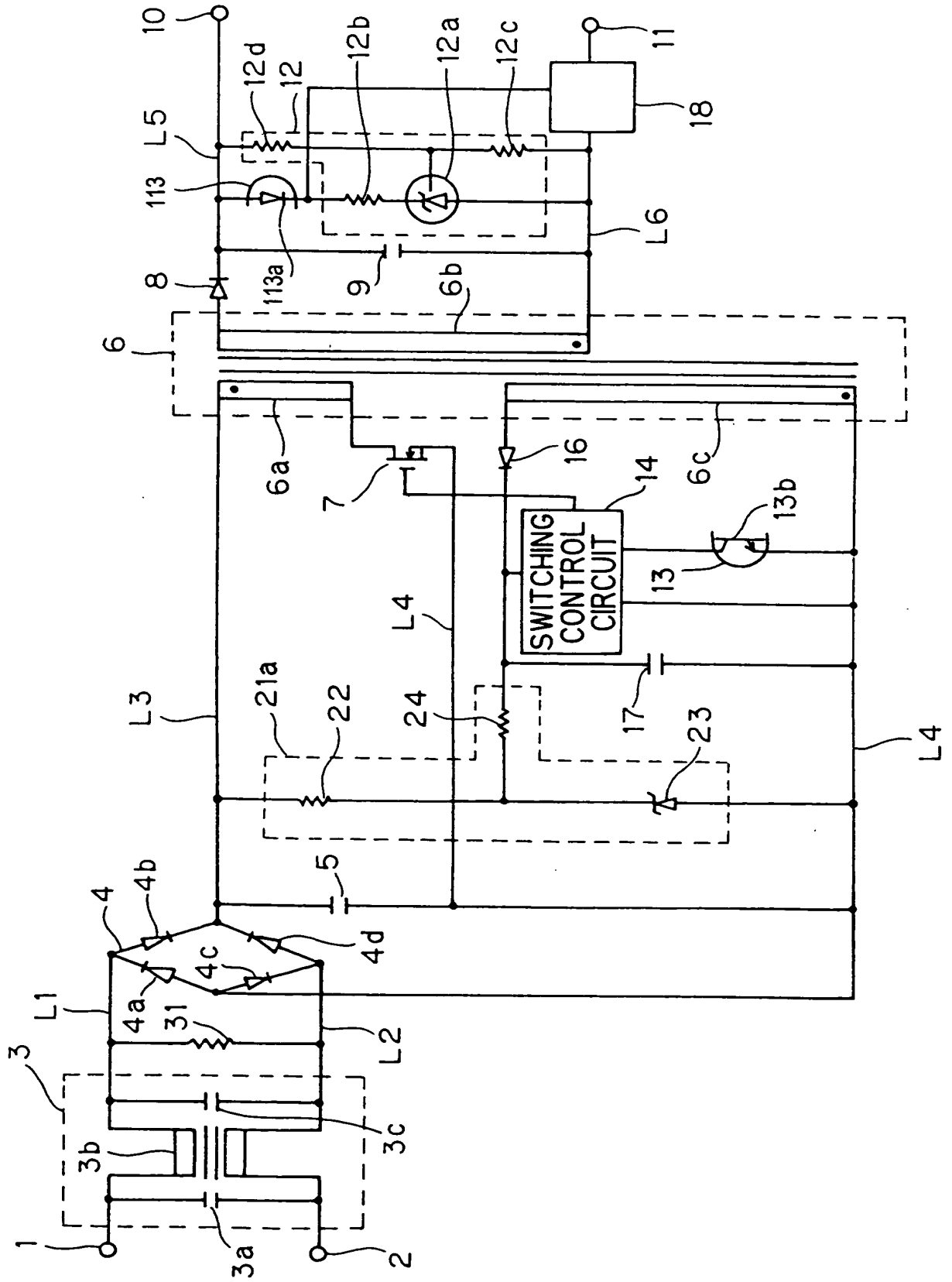


FIG. 3

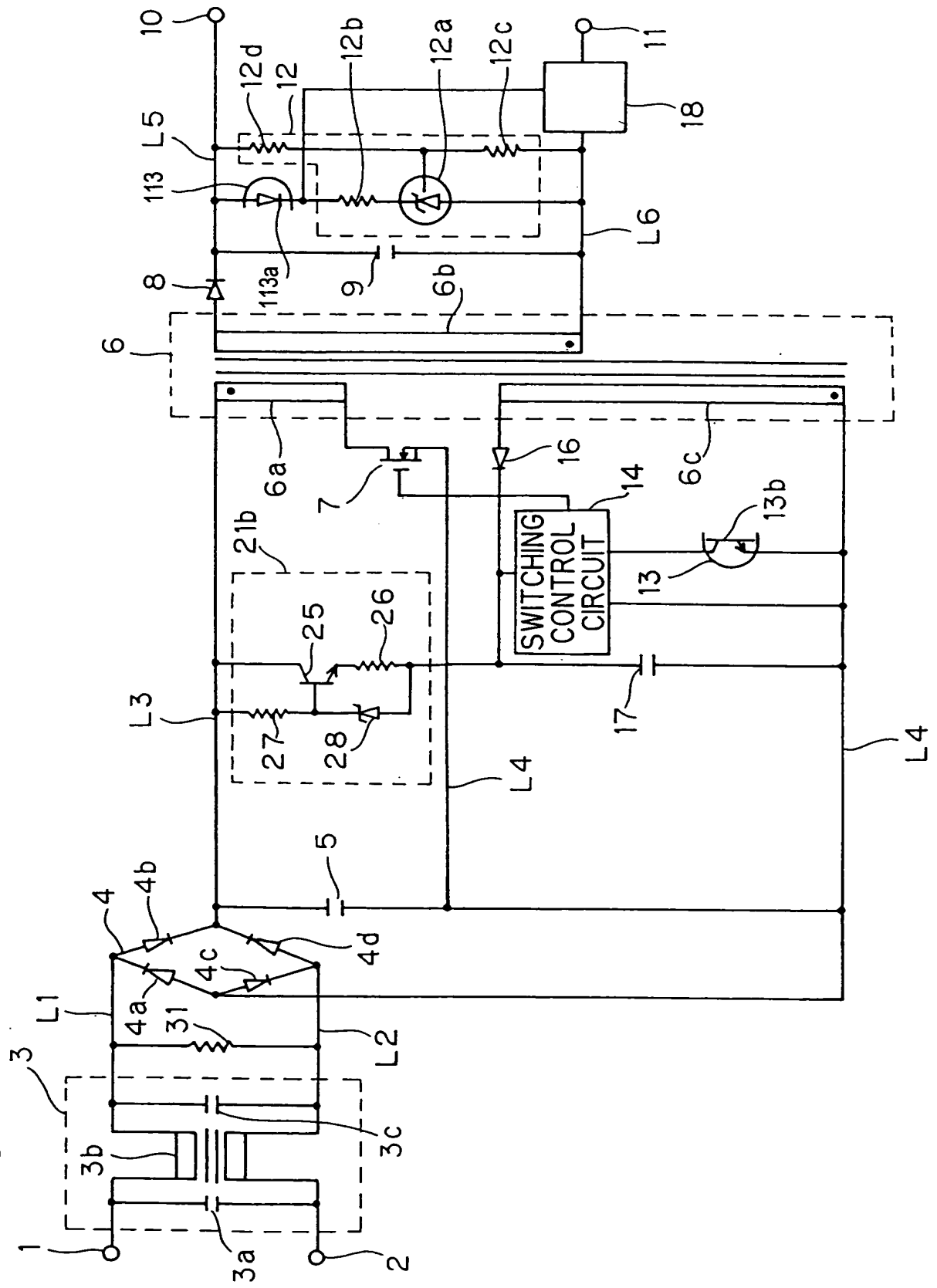


FIG. 4.

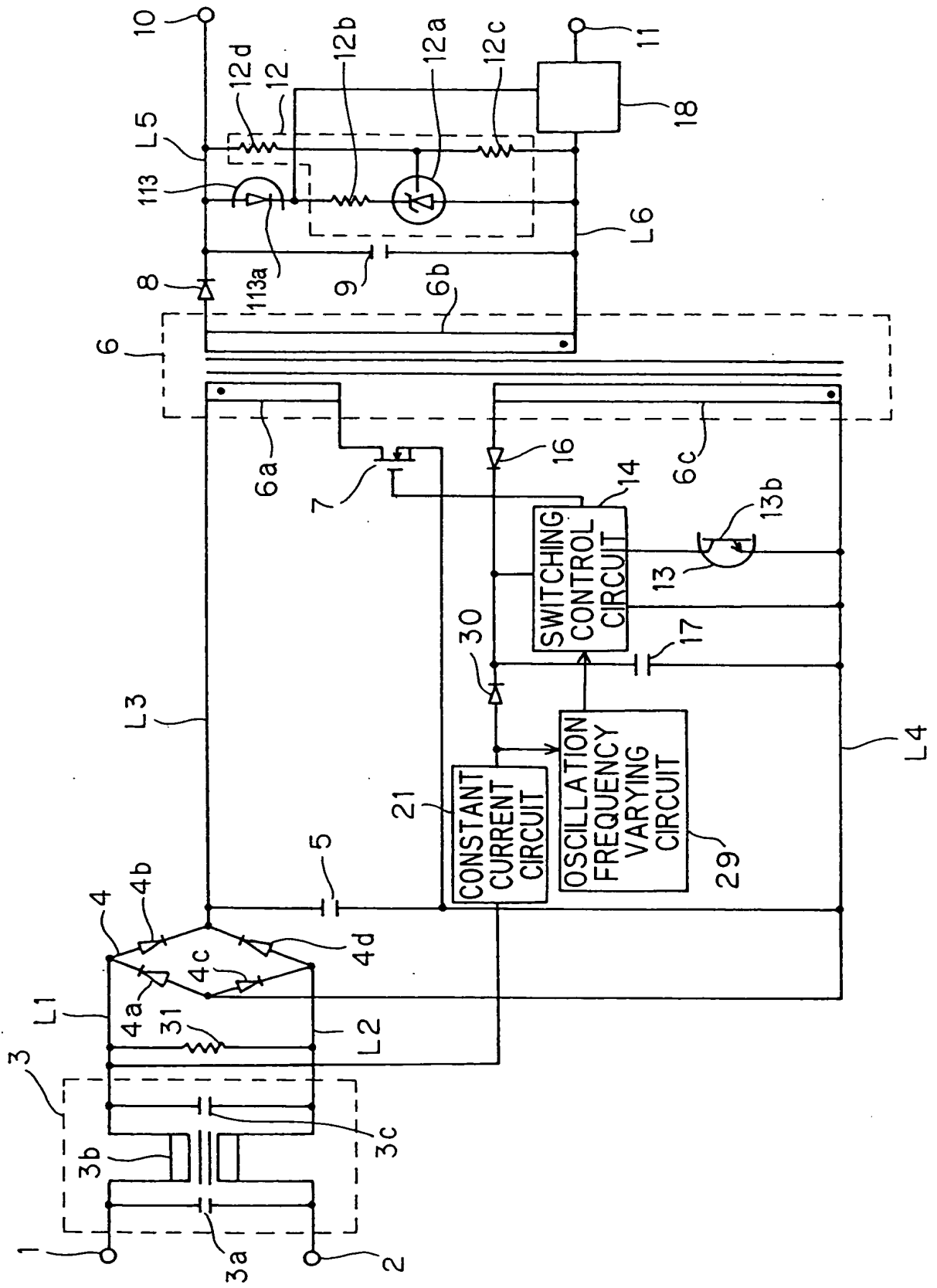


FIG. 5

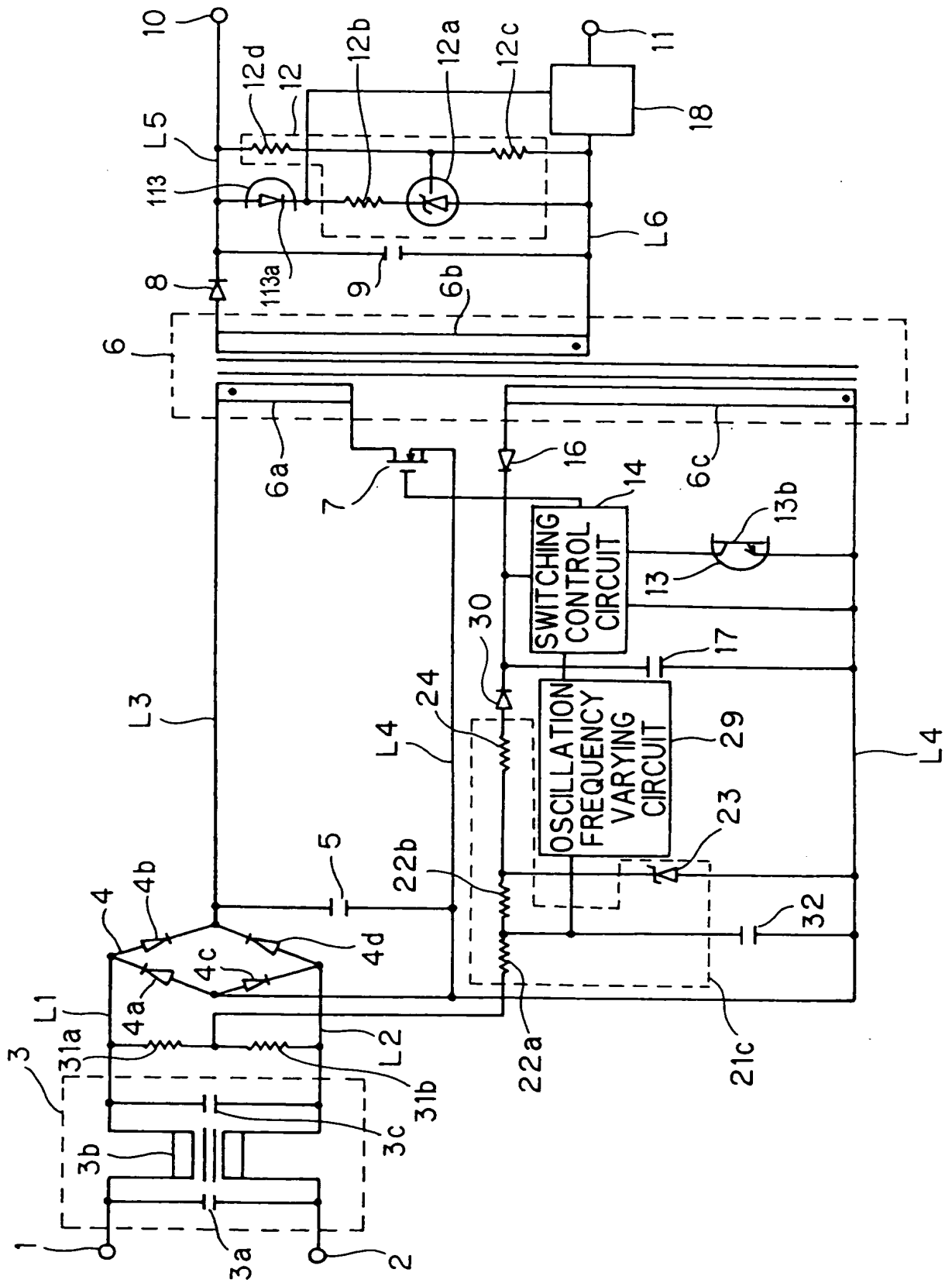
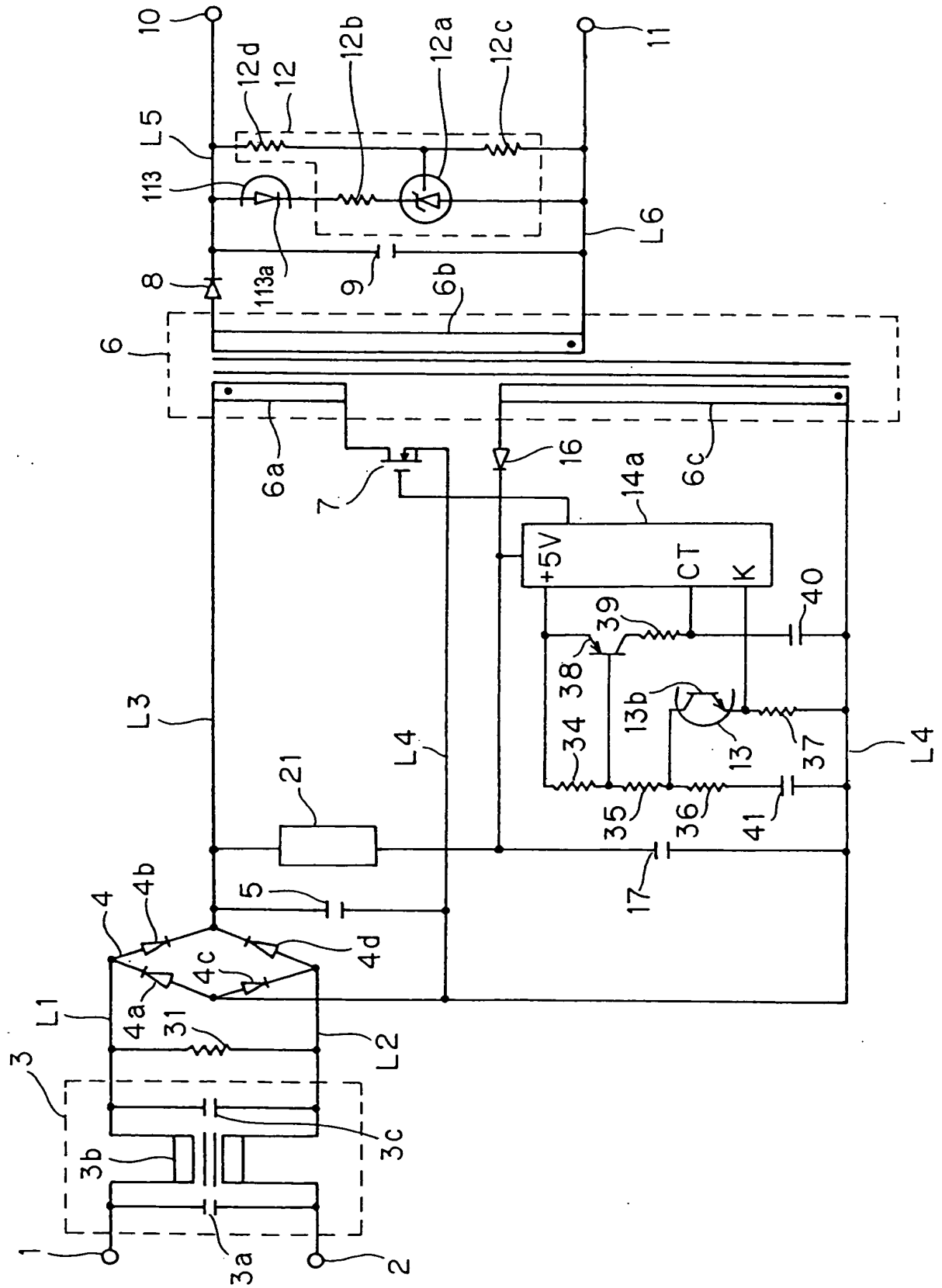


Fig. 6



The diagram illustrates a power supply system. It features a transformer (3) with primary terminals 1 and 2, and secondary terminals 3a, 3b, 3c, and 3d. A bridge rectifier (4) with diodes 4a, 4b, 4c, and 4d is connected to the secondary terminals. A filter capacitor (5) is connected across the bridge output. The output of the rectifier is connected to a switching control circuit (13) via a resistor (15). The switching control circuit (13) is connected to a switching transistor (7) and a diode (16). The switching transistor (7) is connected to a load (L3) and a resistor (12). The diode (16) is connected to a load (L4) and a resistor (12). The load (L3) is connected to a terminal (10) and a terminal (11). The load (L4) is connected to a terminal (10) and a terminal (11). The circuit also includes a switching control circuit (14) and a diode (13b). The circuit is divided into sections L1, L2, L3, L4, L5, L6, and L7.

